****

**كلية العلوم**

**قسم الفيزياء والفلك**

**College of Sciences**

**Department of**

**Physics and Astronomy**

**Tutorial 6**

10

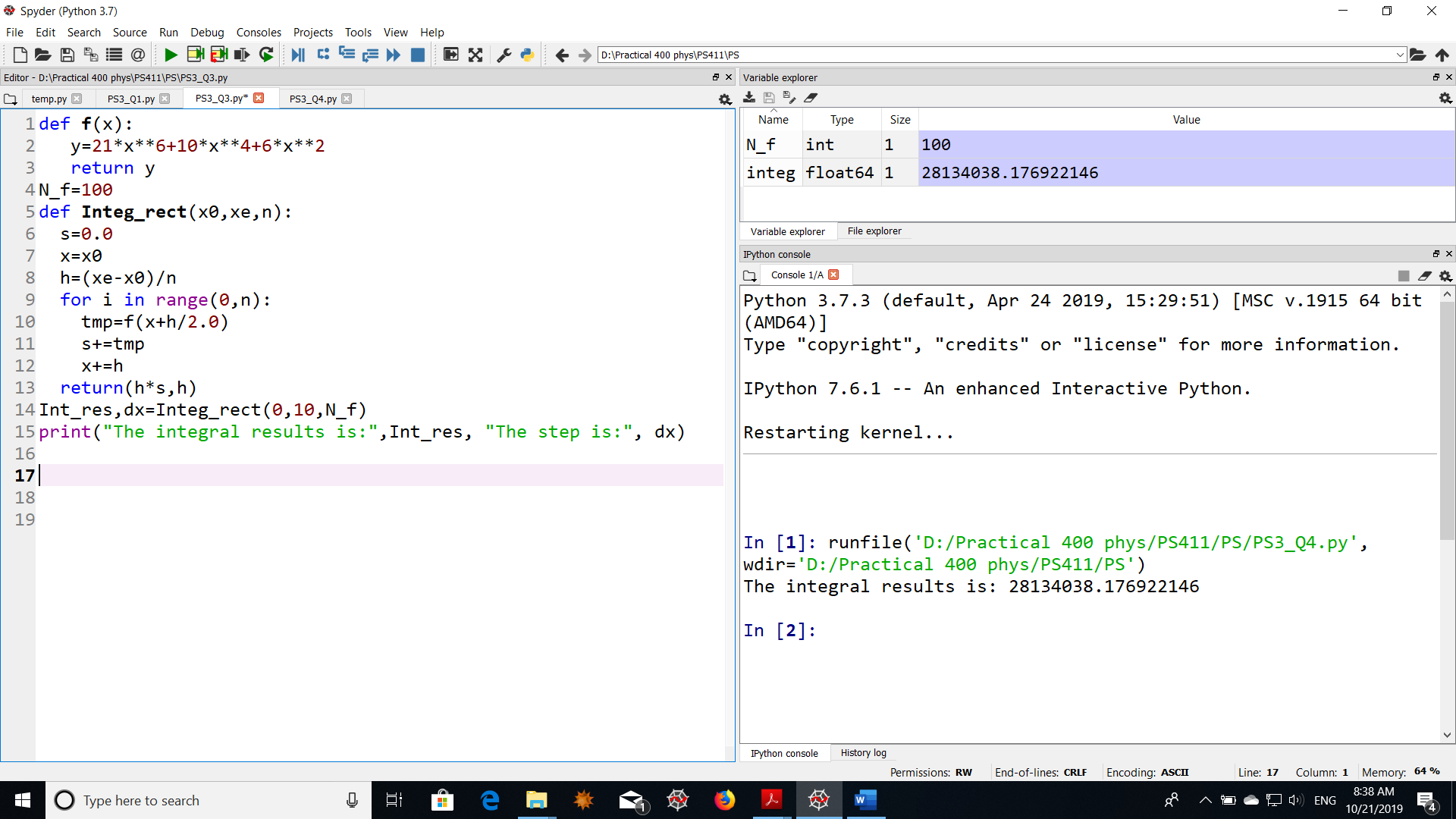
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| --- | --- | --- |
|  | **PHYS 400** | **Academic year 1444 H** |
| **Computational Physics** | **Semester 442** |

|  |  |  |
| --- | --- | --- |
| **Student’s Name** |  | **اسم الطالب** |
| **ID number** |  | **الرقم الجامعي** |

Consider the function

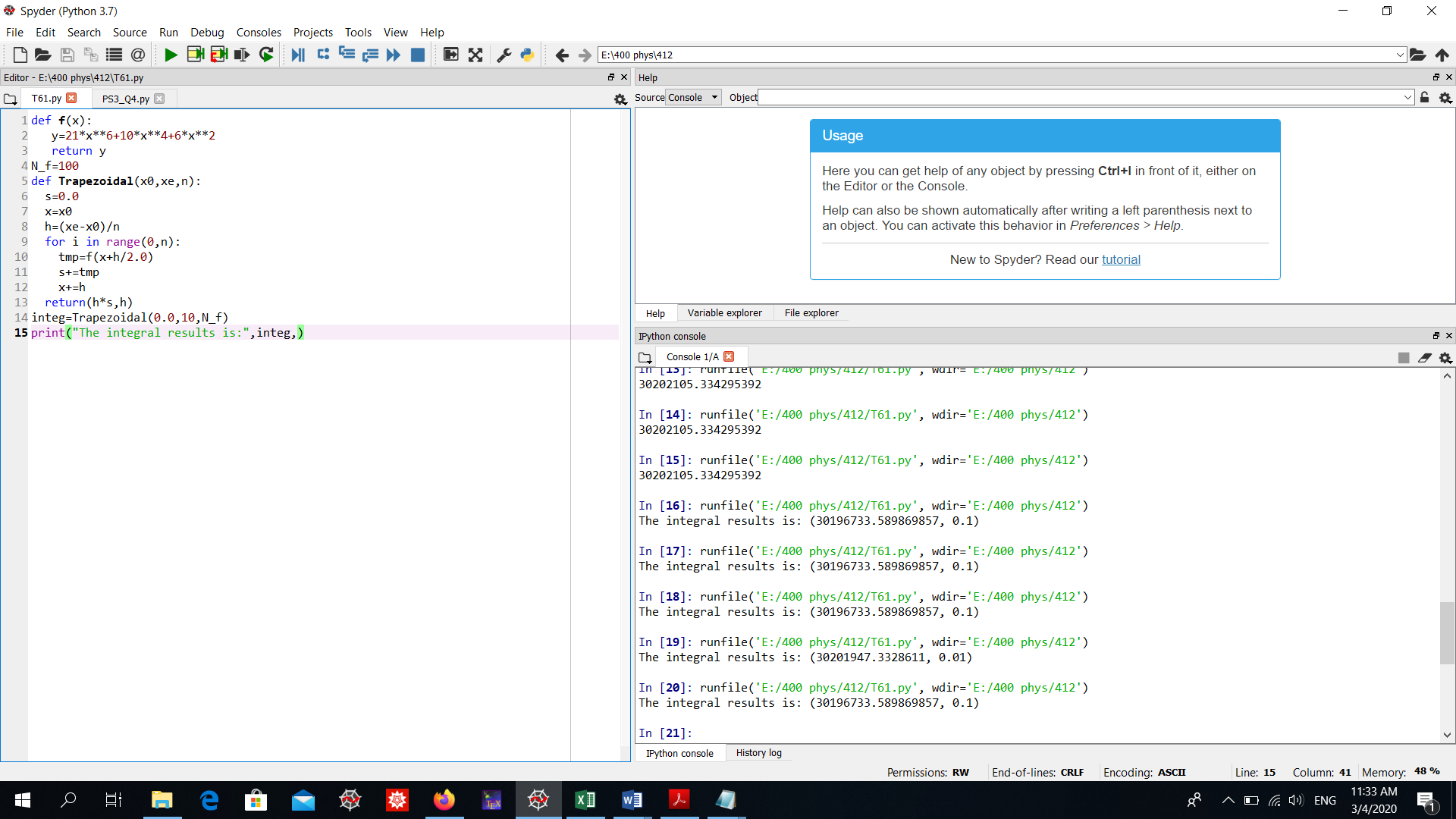
1. find the exact value of the integral

1. Write a Python program allowing to evaluate the integral of the function in the interval [0, 10] by the **rectangular method** and fill Table 5.



*Save the program and name it: T6-Q2*

1. Write a Python program allowing to evaluate the integral of the function in the interval [0, 10] by the **Trapezoidal method** and fill Table 5.



*Save the program and name it: T6-Q3*

1. Fill the following table:

|  |  |  |
| --- | --- | --- |
| **Number of slices (N\_f)** | **rectangular method** | **Trapezoidal method** |
| 100 |  |  |
| 104 |  |  |
| 106 |  |  |

Compare the results with the exact value with respect to the number of slices and conclude

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